

REMARKS

Applicants' attorney is appreciative of the interview granted by the Examiner Fiorito on July 13, 2009. At that interview, Applicants attorney proposed an amendment to Claim 9, and the Examiner agreed that the amendment as proposed would overcome the prior art of record.

Claims 9-16 stand rejected under 35 USC 102(b) or under 35 USC 103(a), over any of Lamerant, Harato et al and McDaniel.

Claim 9 has now been amended as proposed at the interview to recite that the step of heating the aliquot of spent liquor comprises heating to a temperature sufficient that first contact between the ground bauxite and the spent liquor occurs at a temperature greater than about 95°C. This recitation is supported by the specification in paragraph [0012] and [0013] of the application as published. In particular, it is disclosed in the specification that the invention is directed to adding ground bauxite directly into an alkaline solution that is drawn off and will be inserted into the Bayer aluminate liquor circuit, and that this alkaline solution is heated to a temperature such that after the ground bauxite and the alkaline solution have been brought into contact, the temperature of the slurry resulting from the mix is greater than a temperature close to the boiling temperature at atmospheric pressure, in other words typically greater than 95°C. Applicants observed that the filterability properties of mud resulting from alkaline digestion are very strongly degraded if the ground bauxite is mixed into the alkaline solution at ambient temperature and if the resulting slurry is kept at a temperature close to ambient temperature even for a very short period of time. A significant improvement in the filterability is only observed when the temperature of the first contact between the bauxite and the alkaline solution is

more than about 60-70°C, and in any case more than 95°C.

Specific improvements in filterability are discussed in Examples 1 and 2 of the present specification.

Applicants further note that by comparing paragraphs [0012] and [0013] of the specification with claim 9 as written, the alkaline solution referred to in the specification is clearly the spent liquor of Claim 9.

As discussed at the interview, the ground bauxite is typically at a fairly low temperature, slightly above ambient temperature as a result of the grinding. However, as is disclosed in the examples in the specification, the spent liquor must be heated to a fairly high temperature in order to insure that the temperature of first contact is at least about 95°C. In Examples 1 and 2 of the specification, for example, the spent liquor is heated to a temperature of 150°C. However, the exact temperature will depend on the amount of bauxite and the amount of liquor, as well as the desired initial contact temperature.

None of the cited references discloses or suggests that the temperature of initial contact should be at least 95°C. Lamerant, for example, teaches heating a suspension of ground bauxite in an aqueous solution comprising sodium hydroxide at a temperature greater than 80°C, and does not disclose or suggest heating the sodium hydroxide solution to a much higher temperature initially, before adding the bauxite.

Harato et al discloses mixing alumina-containing and reactive silica-containing ore with an alkaline solution to obtain a slurry having solids greater than 20% by weight, optionally preheating the slurry to a temperature of 70-120°C, then supplying to a tube reactor an alkaline slurry mixture resulting from the mixing with an aqueous alkaline solution that has been preheated to a temperature of about 120-160°C. Thus, Harato et al does not disclose or suggest preheating the


alkaline solution to a temperature such that the slurry when formed is already at a temperature of 95°C.

McDaniel discloses a double digestion process in which the bauxite is first reacted with spent caustic soda solution at 113-205°C to produce a first pregnant liquor stream, a granular stream and a muddy substance stream. The muddy substance stream is reacted with or without a small portion of bauxite with a spent caustic soda solution stream at 206-350°C to produce a second pregnant liquor stream and a red mud stream. As disclosed at column 4, lines 1-4, the bauxite is ground with a spent caustic soda solution and pumped as a slurry into digesters and reacted at a temperature of 113 to 205°C with additional spent caustic soda solution. Thus, the slurry is first formed with bauxite and caustic soda, and then pumped into a reaction vessel and heated.

As none of the cited references discloses or suggests preheating an alkaline solution, then mixing in bauxite such that the first contact takes place at a temperature greater than about 95°C, withdrawal of these rejections is requested.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



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